

ABSTRACT

Actual temperatures of intake air, hydraulic oil, and coolant, which are to be cooled by a cooling fan, are detected. Target fan revolution speeds (N_{ti}), (N_{to}), (N_{tc}) are determined by PI control units (37)-(39) based on differences between the actual temperatures (T_{mi}), (T_{mo}), (T_{mc}) and target temperatures (T_{ti}), (T_{to}), (T_{tc}) respectively. The cooling fan is controlled based on the target fan revolution speeds (N_{ti}), (N_{to}), (N_{tc}). In order to restrict accumulation of negative integral elements when performing integration by the PI control units (37), (38), (39), an integration start control system (41) adapted to control the timing for each PI control unit (37), (38), (39) to initiate integration is provided. Target temperatures (T_{ti}), (T_{to}), (T_{tc}) for initiating integration are respectively set, and control is performed so that integral elements of each PI control unit (37), (38), (39) are kept invalid until the actual temperature (T_{mi}), (T_{mo}), (T_{mc}) of the corresponding cooling target fluid, i.e. the intake air, the hydraulic oil, or the coolant, reaches the corresponding target temperature (T_{ti}), (T_{to}), (T_{tc}). Delay in rise of fan revolution speed is prevented.